Eagle - A Cargo Inspection System for Ports of Entry

R. A. Armistead* and R. S. Frankle
ARACOR
425 Lakeside Drive
Sunnyvale, CA 94085-4704
Phone: (408) 733-7780 / FAX: (408) 732-1996
armistead@aracor.com / frankle@aracor.com

Following extensive testing and operational evaluations, the Bureau of Customs and Border Protection (BCBP) is purchasing ARACOR's Eagle® cargo inspection system for deployment at U.S. seaports. ARACOR's contract with BCBP will enable the purchase of an unlimited quantity of Eagles for the next five years. The Eagle is an x-ray imaging system integrated into a self-propelled vehicle and is both mobile and relocatable. It provides the highest penetration of all such systems and is capable of 100% single-pass inspection of sea containers and large trucks. A 20-foot container can be scanned in less than 30 seconds. Moreover, the Eagle's design ensures that it can be safely operated in congested areas, such as seaports and border crossings, without employing large exclusion areas or radiation badges for personnel. Radiation measurements have confirmed that a stowaway hidden in cargo would not be harmed during an Eagle inspection

ARACOR

Scale of the Inspection Problem

- Cargo containers and trucks considered major terrorist threat
- U.S. has over 460 ports of entry
- U.S. has 361 seaports with over 5,000 facilities
- 6 million containers arrive annually
- NAFTA's "Open Highways" provision will increase inspection requirements at land borders
- Explosives, weapons and drugs can escape detection

ARACOR

Objectives of Cargo Inspection

- Detect weapons of terrorism
- Reduce the flow of illegal drugs into the country
- Interdict other contraband (stolen or counterfeit items, illegal immigrants)
- Verify manifests to mitigate duty and tax fraud

ARACOR

Major Inspection Issues

- Inspections must not severely impact flow of commerce
- Lack of inspection space at ports
- Limited number of Customs inspectors
- Physical inspections require 2 person days/container
- Some concealment modes are difficult to detect
- Threat of explosives, dirty bombs and WMDs introduce safety concerns
- Very few cargo inspection systems with required performance are in operation
- The CSI and C-TPAT programs will be impacted by same issues

ARACOR

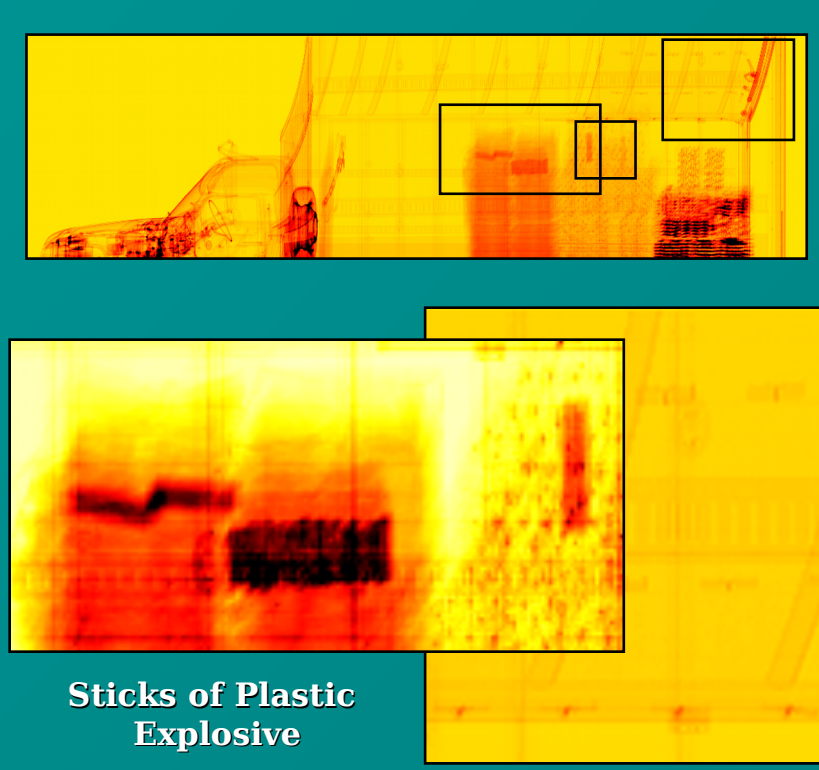
Eagle Cargo Inspection System

- Mobile high-performance x-ray imaging system
- Provides an efficient capability for radiographically examining cargo containers and trucks - has twice the cargo penetration of other systems
- Designed for manifest verification or contraband discovery at seaports or border check points
- Single container can be imaged in 30 seconds

ARACOR

Detection of Explosives and Drugs

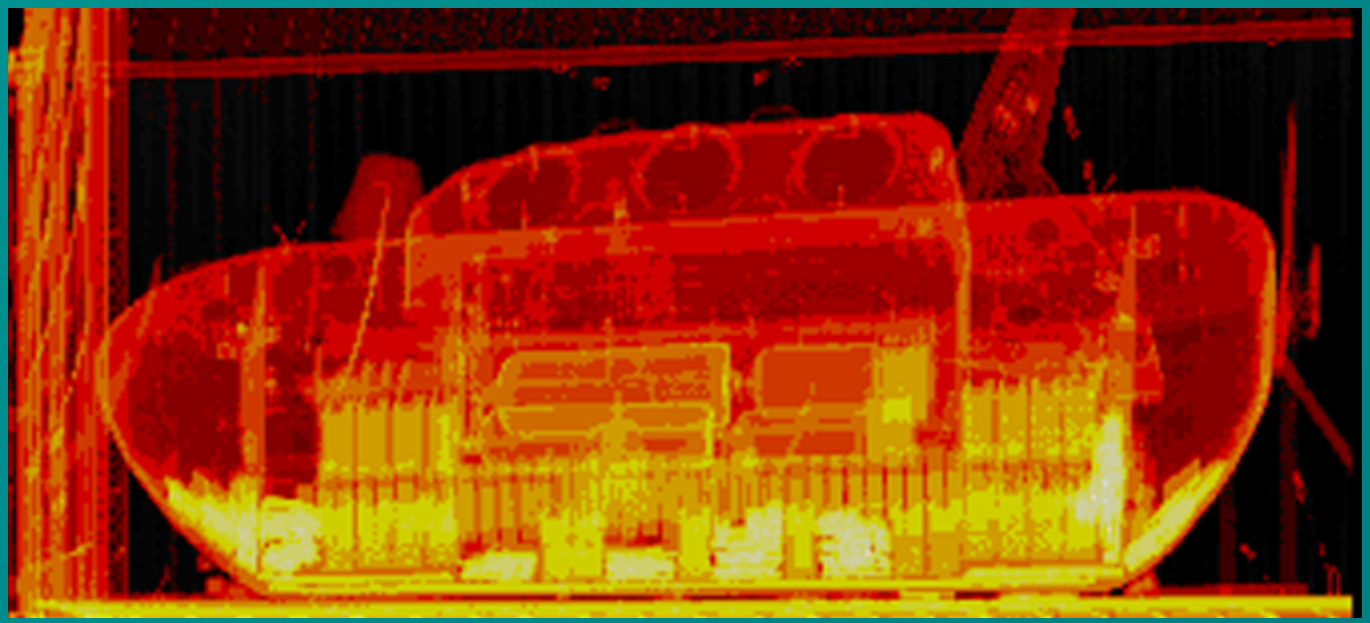
- Provides high-resolution images of the contents of sea and air cargo containers, vehicles and rail cars



ARACOR

Mini-Sub in Cargo Container

- Provides highest cargo penetration (>300mm) - rated by U.S. Customs as the only Level 4 inspection system



ARACOR

Summary

The Eagle incorporates a powerful 6 MeV x-ray source in a highly maneuverable vehicle, which can be driven within a port and moved to a different site in a few days. It provides a cargo penetration equivalent to more than 300 mm of steel, which enables it to inspect even densely loaded containers and trucks. An entire 20-foot container on a truck can be inspected in less than 30 seconds. At the same time, the Eagle is radiation safe for operators, nearby workers and even stowaways hiding in cargo. The DHS Bureau of Customs and Border Protection, which is purchasing the Eagle for deployment at U.S. seaports, recognized that it offers the imaging performance of a fixed inspection facility in a much less expensive mobile and relocatable system. This combination of features gives the Eagle a unique position among available cargo inspection systems. These capabilities can also be applied to the inspection of containers and trucks at foreign ports, particularly in countries participating in the U.S. Container Security Initiative.

ARACOR